IN THE CLAIMS

Please amend the claims as follows:

Claims 1-14 (Canceled).

Claim 15 (Currently Amended): A method of generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising the steps of:

generating said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

generating a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

transmitting said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in the frequency domain sequences of said first and second parts ~~the number of complex symbols in the frequency domain sequences of said preamble signal~~ are set so that a synchronization performed in the receiver side includes ~~is~~

~~optimized by~~ correlating said frequency domain sequence of said first part and said frequency domain sequence of said second part.

Claim 16 (Currently Amended): A device for generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising:

a preamble signal generator configured to generate ~~generating means for generating~~ said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

a time domain signal generator configured to generate ~~generating means for generating~~ a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

a transmitter configured to transmit ~~transmitting means for transmitting~~ said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in the frequency domain sequences of said first and second parts ~~the number of complex symbols in the frequency domain sequences of said preamble signal~~ are set so that a synchronization performed in the receiver side includes ~~is~~

~~optimized by~~ correlating said frequency domain sequence of said first part and said frequency domain sequence of said second part.

Claim 17 (Currently Amended): A method of generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising the steps of:

generating said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

generating a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

transmitting said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in the frequency domain sequence ~~the number of complex symbols~~ of said first part correlates to said 12 complex symbols in the frequency domain sequence ~~said number of complex symbols~~ of said second part so that a correlation

peak is generated by said timing and frequency synchronization performed in said transmitter side with said second part ~~is optimized~~.

Claim 18 (Currently Amended): A device for generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising:

a preamble signal generator configured to generate ~~generating means for generating~~ said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

a time domain signal generator configured to generate ~~generating means for generating~~ a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

a transmitter configured to transmit ~~transmitting means for transmitting~~ said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in the frequency domain sequence ~~the number of complex symbols~~ of said first part correlates to said 12 complex symbols in the frequency domain sequence ~~said number of complex symbols~~ of said second part so that a correlation

peak is generated by said timing and frequency synchronization performed in said transmitter side with said second part ~~is optimized~~.

Claim 19 (Currently Amended): A method of generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising the steps of:

generating said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

generating a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

transmitting said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in said frequency domain sequences of the first and second parts have correlation properties set for said timing and frequency synchronization process performed in said receiver side.

Claim 20 (Currently Amended): A device for generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising:

preamble signal generator configured to generate ~~generating means for generating~~ said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

time domain signal generator configured to generate ~~generating means for generating~~ a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

a transmitter configured to transmit ~~transmitting means for transmitting~~ said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in said frequency domain sequences of the first and second parts have correlation properties set for said timing and frequency synchronization process performed in said receiver side.

Claim 21 (Currently Amended): A method of generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising the steps of:

generating said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

generating a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

transmitting said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in the frequency domain sequence ~~said complex symbols~~ of said first part are correlated with said 12 complex symbols in the frequency domain sequence ~~said complex symbols~~ of said second part for said timing and frequency synchronization process performed in said receiver side.

Claim 22 (Currently Amended): A device for generating and transmitting a preamble signal in an OFDM (Orthogonal Frequency Division Multiplexing) system, comprising:

preamble signal generator configured to generate ~~generating means for generating~~ said preamble signal comprising at least a first part, ~~and~~ a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein

said first part is designed for a frame detection and/or an AGC (automatic gain control), ~~and~~ said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said ODFM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers ~~a number of complex symbols when an IFFT (Inverse Fast Fourier Transform) is performed~~;

time domain signal generator configured to generate ~~generating means for generating~~ a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences ~~mapping said frequency domain sequences into predefined IFFT points~~; and

a transmitter configured to transmit ~~transmitting means for transmitting~~ said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in the frequency domain sequence ~~said complex symbols~~ of said first part are correlated with said 12 complex symbols in the frequency domain sequence ~~said complex symbols~~ of said second part for said timing and frequency synchronization process performed in said receiver side.